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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,152	11/25/2003	Michael D. Grah	P50-0053	5544

7590 05/03/2005

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EXAMINER	
FISCHER, JUSTIN R	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/721,152	GRAH, MICHAEL D.	
	Examiner	Art Unit	
	Justin R. Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abinal (FR 2,794,686) in view of Oberster (US 5,202,363), Roland (US 4,929,684), and McElrath (US 6,051,653). It is initially noted that the examiner has included US 6,564,842 (related US case) in order to clearly set forth the disclosure of Abinal.

Abinal discloses a wheel assembly formed of a tire and a rim, wherein said assembly further includes a tire support 1 capable of supporting the tire in an underinflated operating condition. In describing the composition of the support, Abinal broadly suggests a natural or synthetic rubber-based compound may be used (Column 3, Lines 25-30- of '842). While the reference fails to expressly suggest the inclusion of a metal salt and a peroxide, such additives are extremely well known and conventionally used in a wide variety of rubber compositions, including tire rubber compositions, in order to provide enhanced physical properties, as shown for example by Oberster (Column 1, Lines 5-15), Roland (Column 1, Lines 25-30 and Column 2, Lines 10-20), and McElrath (Column 1, Lines 20-23). One of ordinary skill in the art at the time of the invention would have found it obvious to include the claimed additives in the support composition of Abinal since the above noted benefits are consistent with the desired

properties of a tire support. It is further noted that it is well recognized that metal salts provide additional benefits when included in rubber compositions, including improved thermal and oxidative stability and improved flex fatigue resistance. Absent any conclusive showing of unexpected results, it would have been within the purview of one of ordinary skill in the art at the time of the invention to form the composition of Abinal with a metal salt of a carboxylic acid and a peroxide curing agent.

With respect to claim 3, 5, and 20, Abinal suggests the use of a natural rubber-based compound (natural rubber) or a synthetic rubber-based compound.

Regarding claim 4, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of either of the claimed rubbers as they represent common rubbers that are extensively used in a wide variety of tire components. It is emphasized that Abinal broadly suggests the use of natural or synthetic-based rubber compounds and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed rubber compounds.

As to claims 6 and 7, Oberster (Column 2, Lines 55-68), Roland (Column 1, Lines 28-31), and McElrath (Column 1, Lines 25-31) recognize the conventional use of methacrylates, particularly zinc dimethacrylate.

With respect to claim 8, Oberster (Column 5, Lines 25-36) and McElrath (Column 3, Lines 49-55) recognize the conventional use of the claimed peroxide curing agents.

Regarding claims 9-11 and 18, fillers represent common additives that are incorporated into nearly every tire rubber composition to provide increased

reinforcement. In particular, carbon black and silica are the most common fillers, wherein a wide variety of tire rubber compositions include both fillers in order to obtain the benefits of each filler (especially since carbon black is expensive). One of ordinary skill in the art at the time of the invention would have expected the support composition of Abinal to include a reinforcing filler such as carbon black and/or silica. It is further noted that claims 10 and 11 do not actually require a reinforcing filler as the lower value for the range of 0 phr. In any event, the claimed values of 0-120 phr, more preferably 0-60 phr, are consistent with the filler amounts conventionally used in tire rubber compositions.

As to claim 12, the claim as currently drafted does not require sulfur (lower value of range is 0 phr). In any event, sulfur-based curing systems are conventionally used in tire rubber compositions and one of ordinary skill in the art at the time of the invention would have expected sulfur to be included in the support composition of Abinal.

Regarding claim 13, Figures 2 and 3 of '842 depict the claimed support structure, including a base 2, a crown 3, an annular body 4, a plurality of partitions 13, and a plurality of connecting members or joining members 12.

With respect to claim 14, the support of Abinal, as best depicted in Figure 1, includes a plurality of axially extending cavities, wherein said cavities extend at least halfway into the annular body.

As to claims 15-17, the claimed amounts are consistent with the conventional amounts of metal salts used in similar rubber compositions, as shown by Oberster (Column 5, Lines 14-18) and Roland (Column 2, Lines 25-32). It is emphasized that

one of ordinary skill in the art at the time of the invention would have been able to appropriately select the amount as a function of the specific rubber composition.

Regarding claim 19, the claim as currently drafted does not require polybutadiene (lower range of 0 phr). In any event, Abinal broadly suggests the use of synthetic rubber-based compounds and it is extremely well known that polybutadiene represents one of the most common synthetic rubber compounds in the tire industry. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire support of Abinal from a polybutadiene.

Conclusion

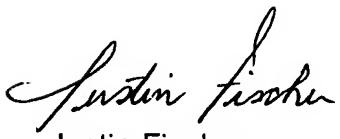
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kataoka (US 4,191,671) discloses an abrasion resistant rubber composition including metal salts of carboxylic acids useable in tire components, wherein said composition provides improved mechanical properties and flex fatigue resistance. Talma (US 5,877,327) teaches the inclusion of a metal salt to sulfur vulcanizable rubber compositions, such as those used in the tire industry, in order to provide improved flex fatigue resistance.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin Fischer

May 2, 2005